

438
164

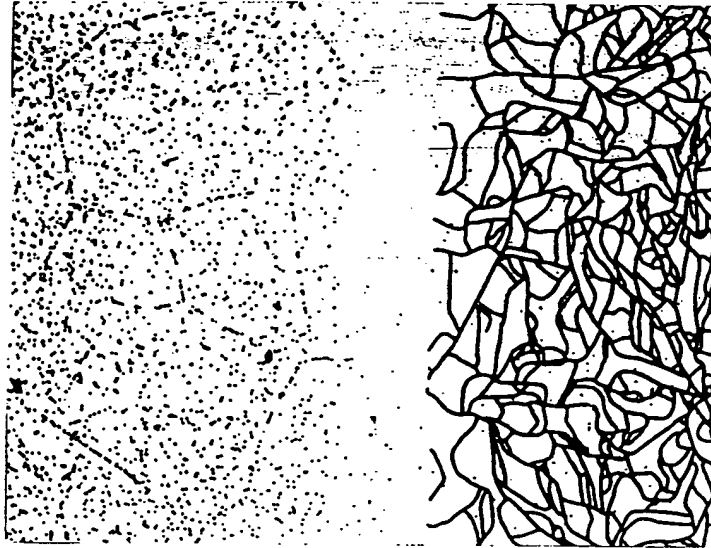


Fig.1A

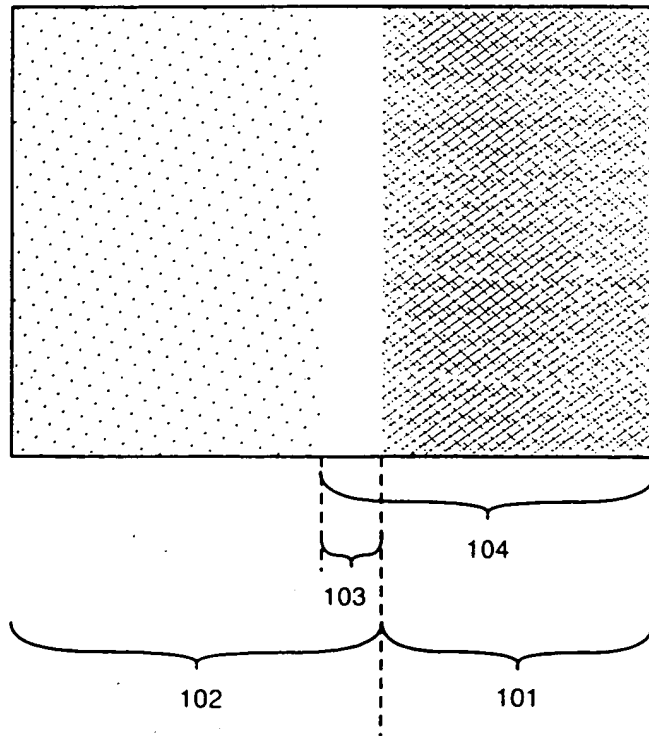


Fig.1B

Fig.2A

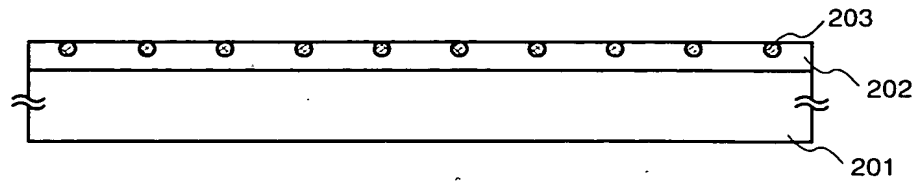


Fig.2B

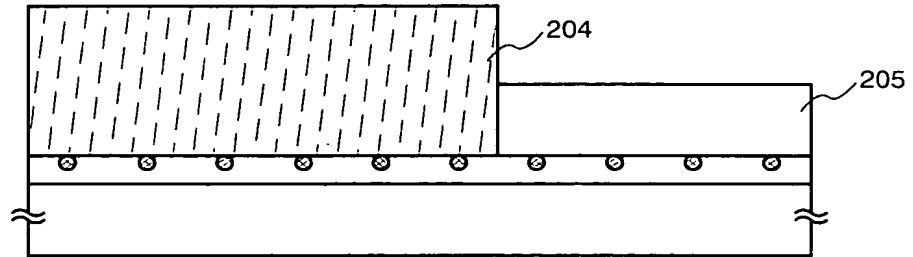


Fig.2C

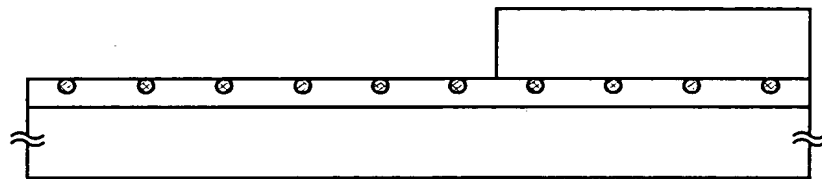


Fig.2D

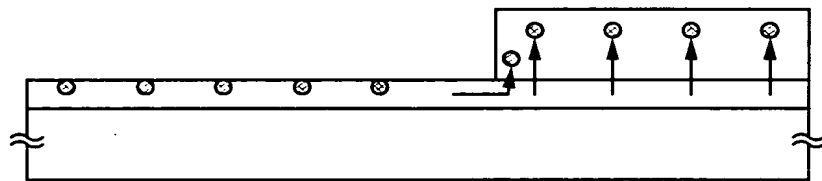
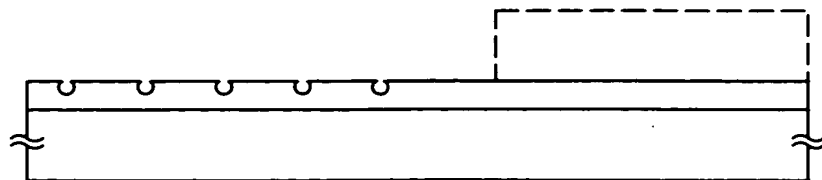


Fig.2E



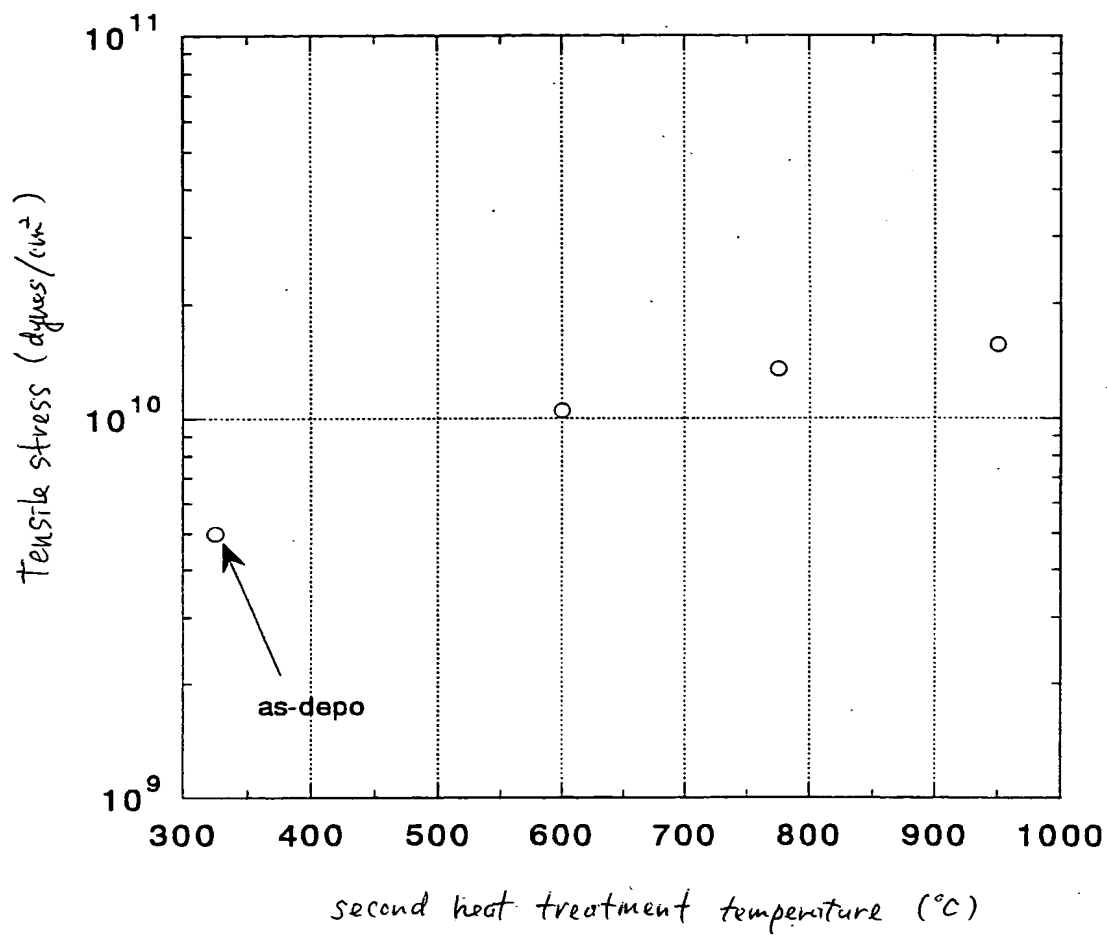


Fig. 3

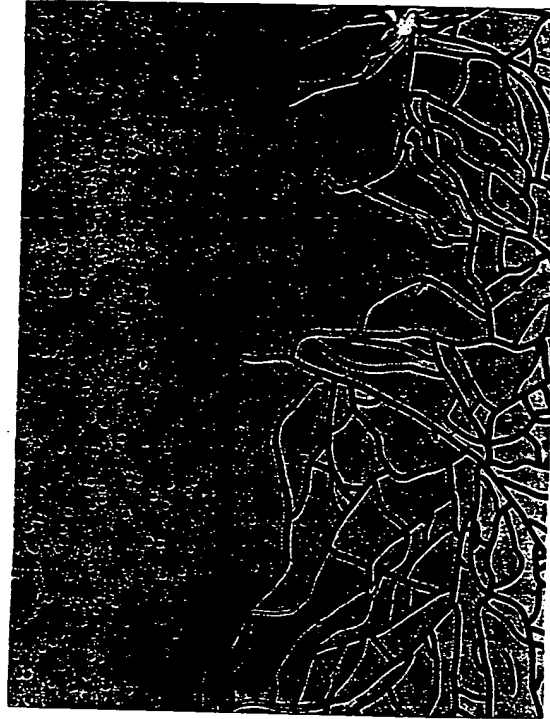


Fig.4

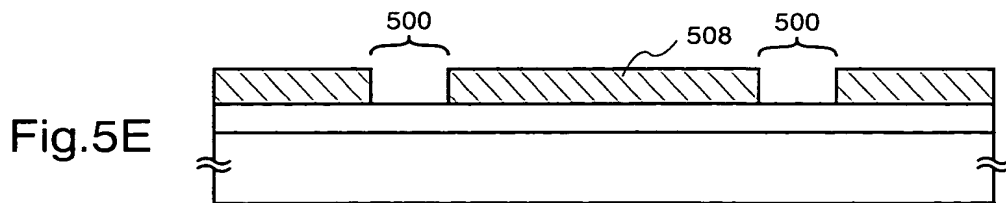
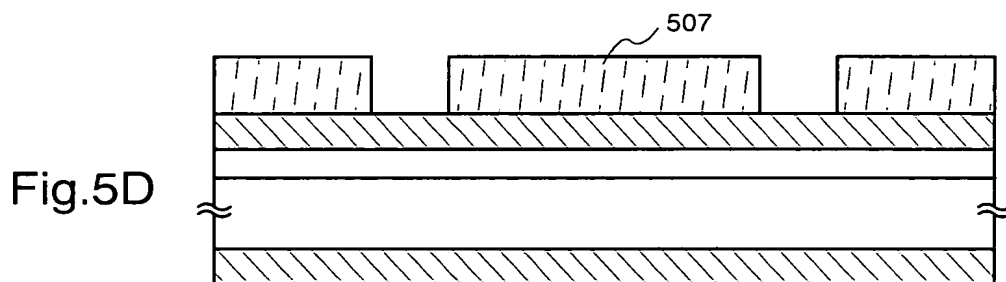
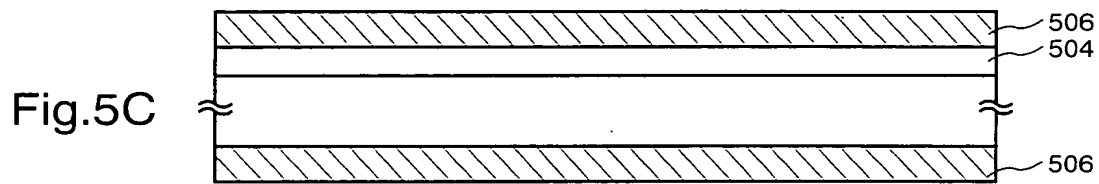
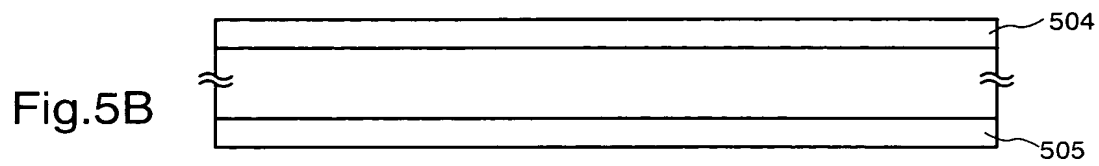
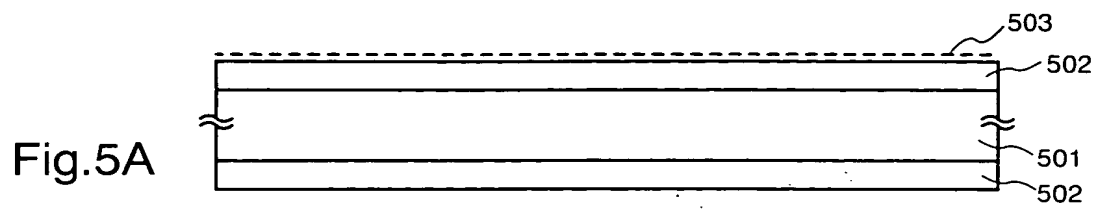


Fig.6A

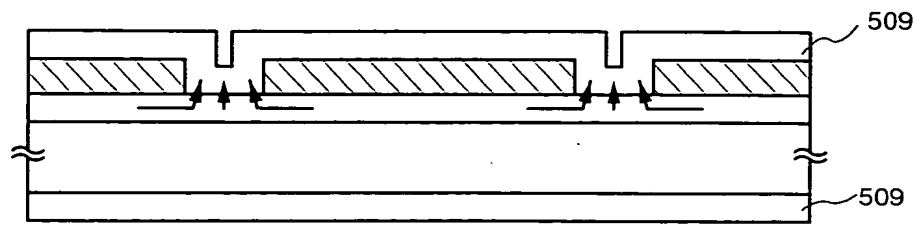


Fig.6B

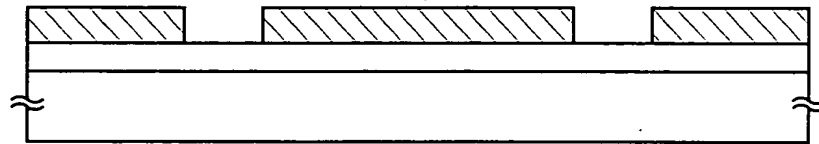


Fig.6C

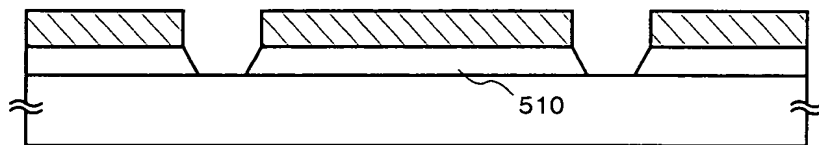


Fig.6D

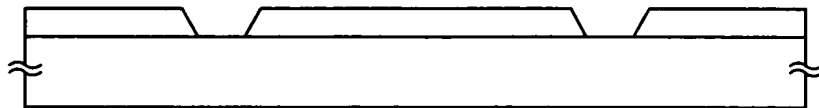


Fig.7A

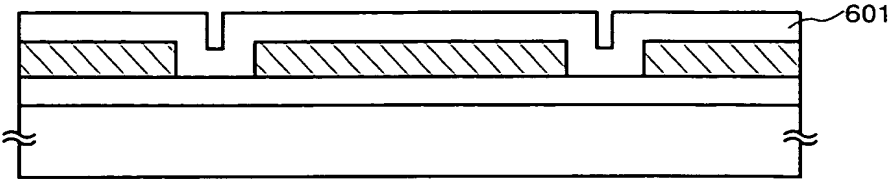


Fig.7B

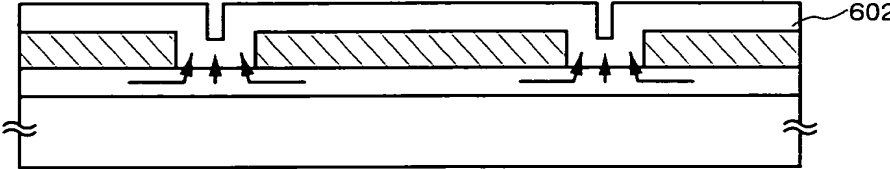


Fig.7C

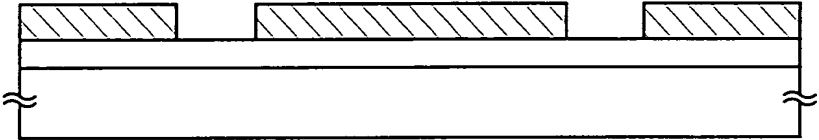


Fig.7D

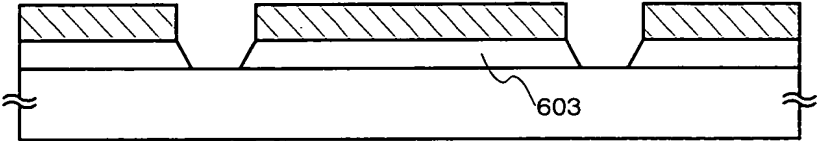


Fig.7E

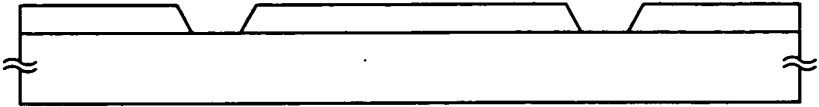


Fig.8A

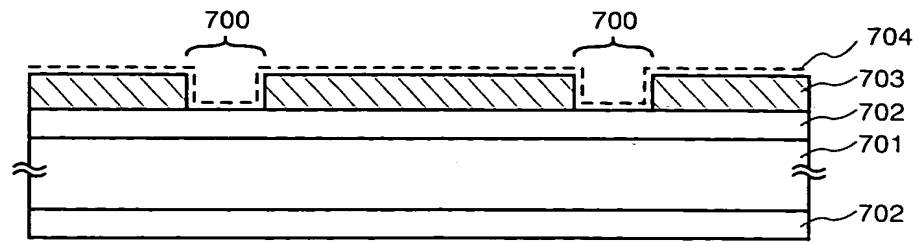


Fig.8B

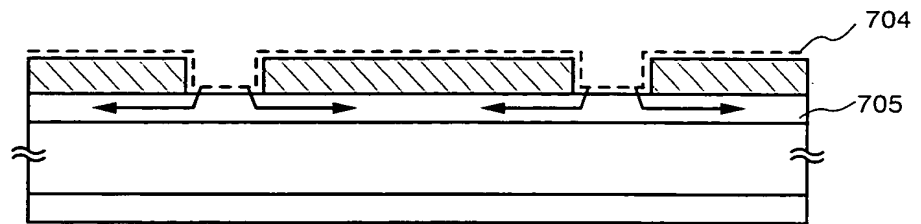


Fig.8C

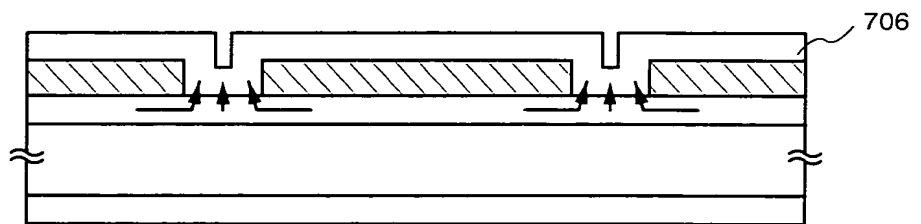


Fig.8D

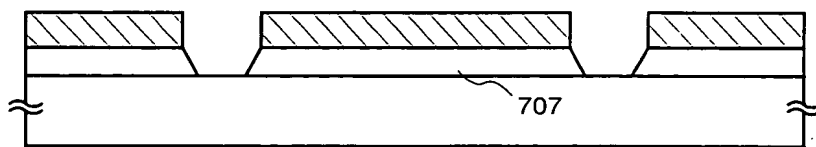
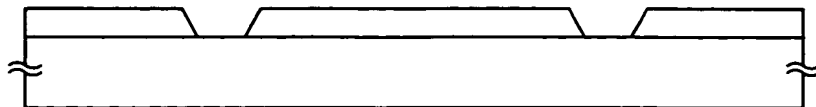


Fig.8E



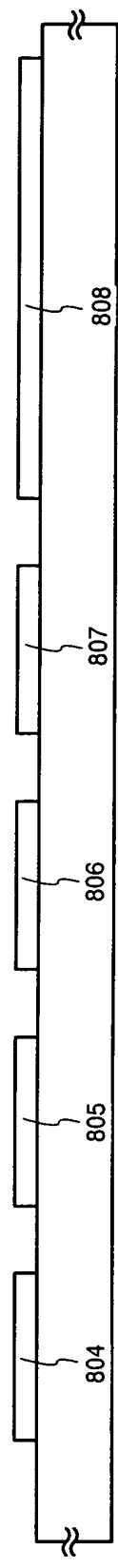


Fig. 9A

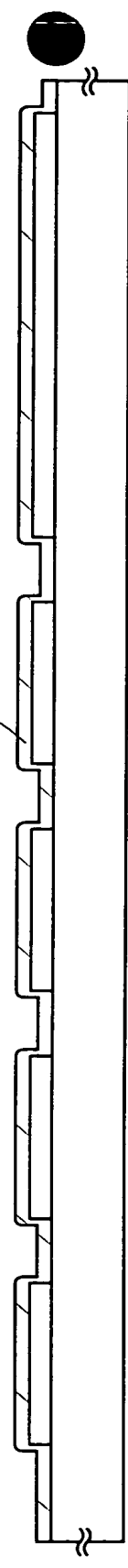


Fig. 9B

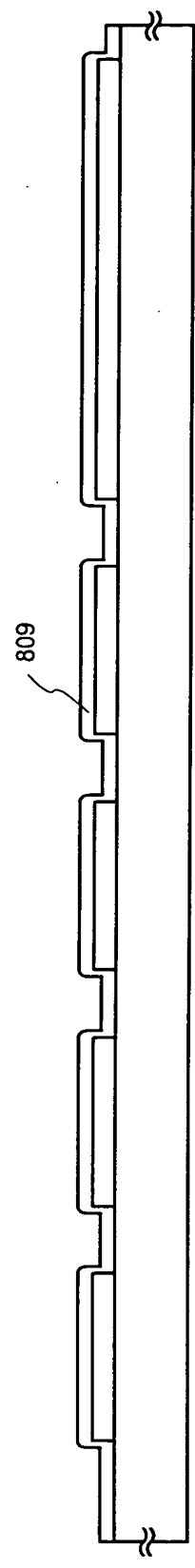


Fig. 9C

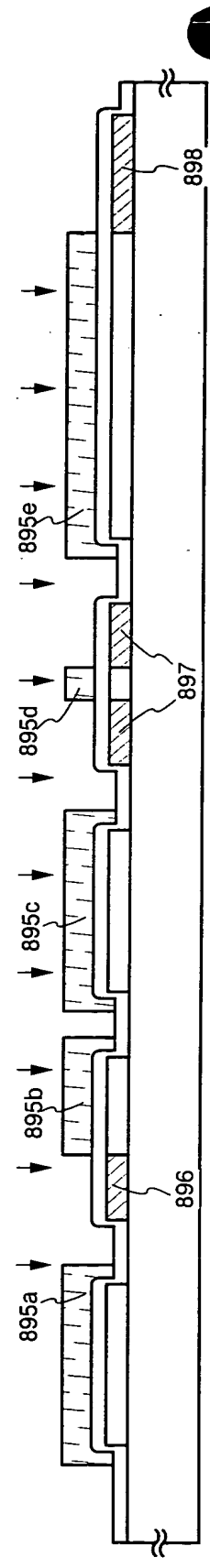


Fig. 9D

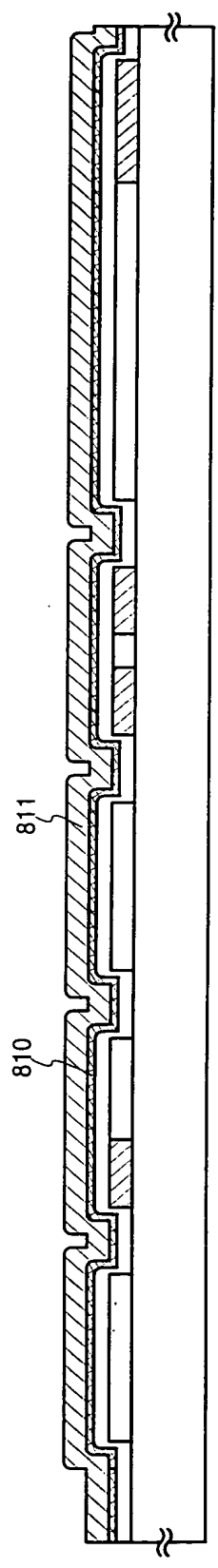


Fig. 9E

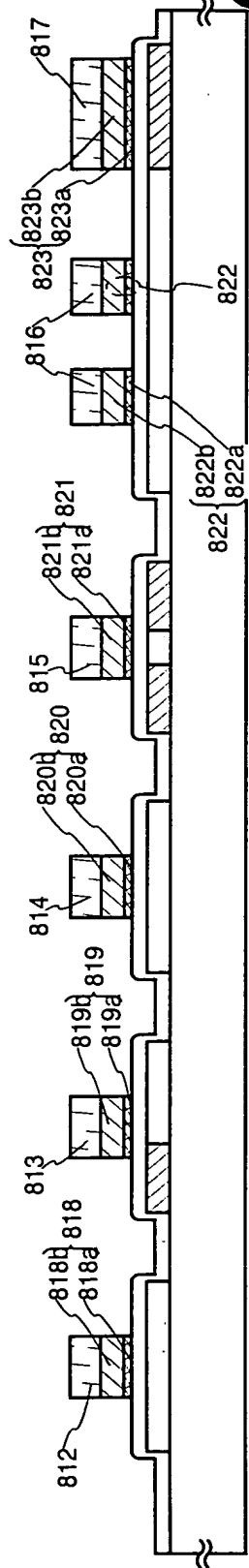


Fig. 10A

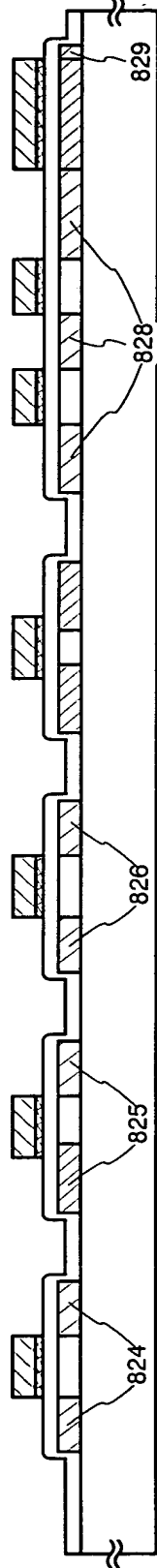


Fig. 10B

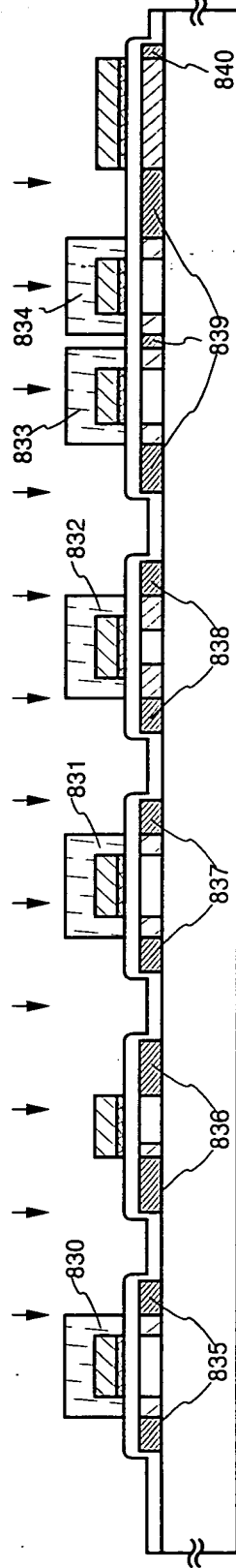


Fig. 10C

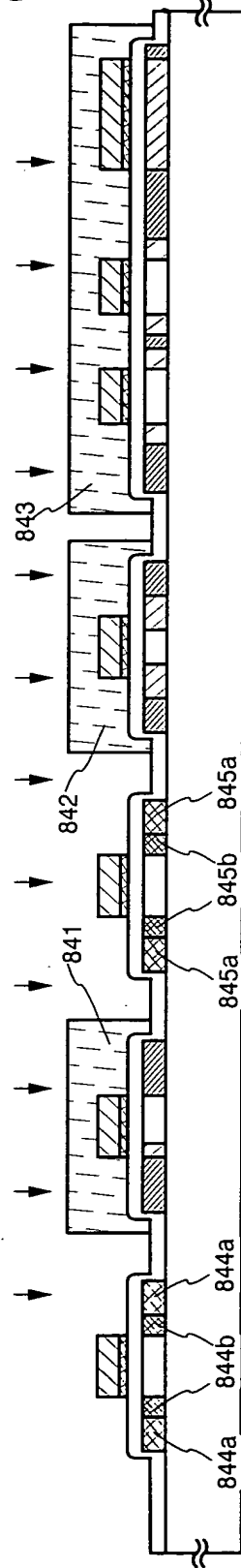


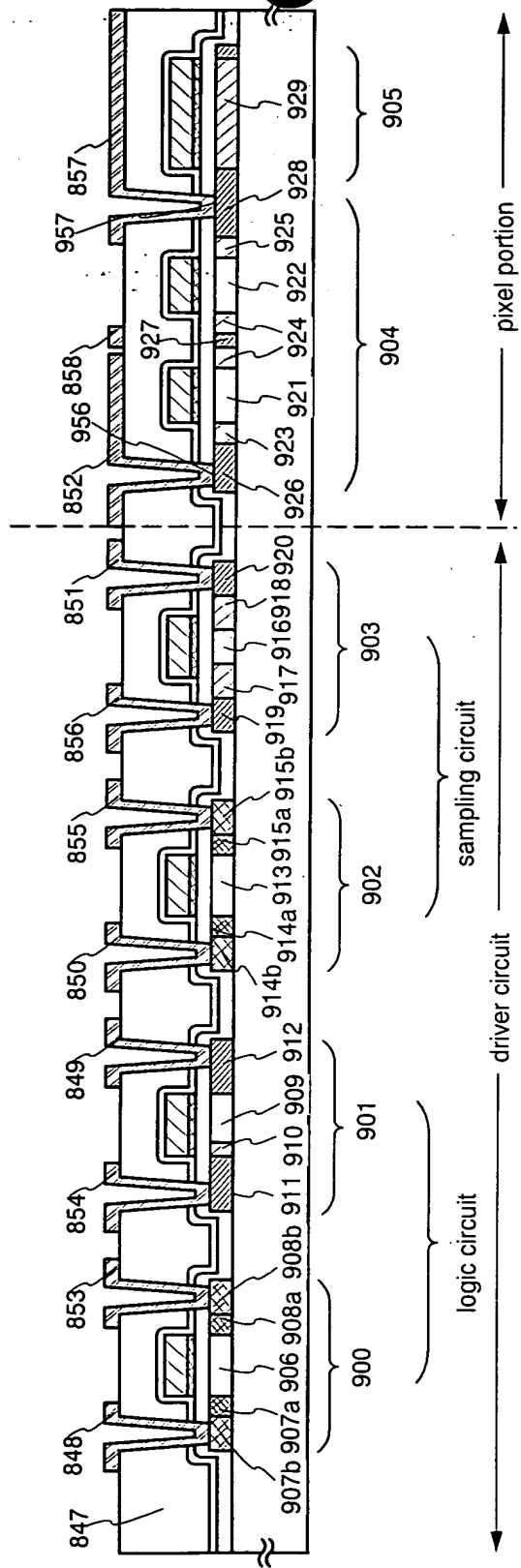
Fig. 10D

846

Fig.11A

Fig.11B

Fig.11C



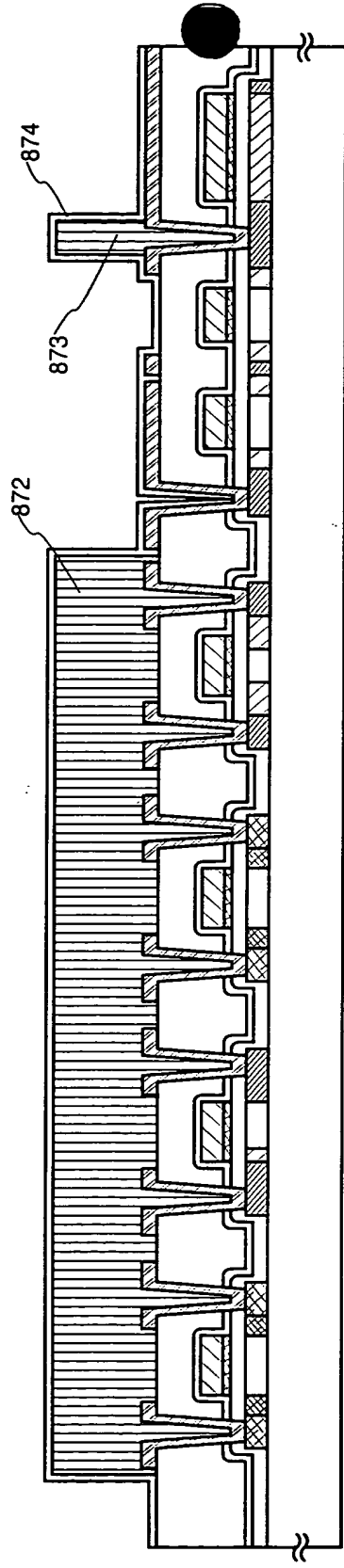


Fig.12A

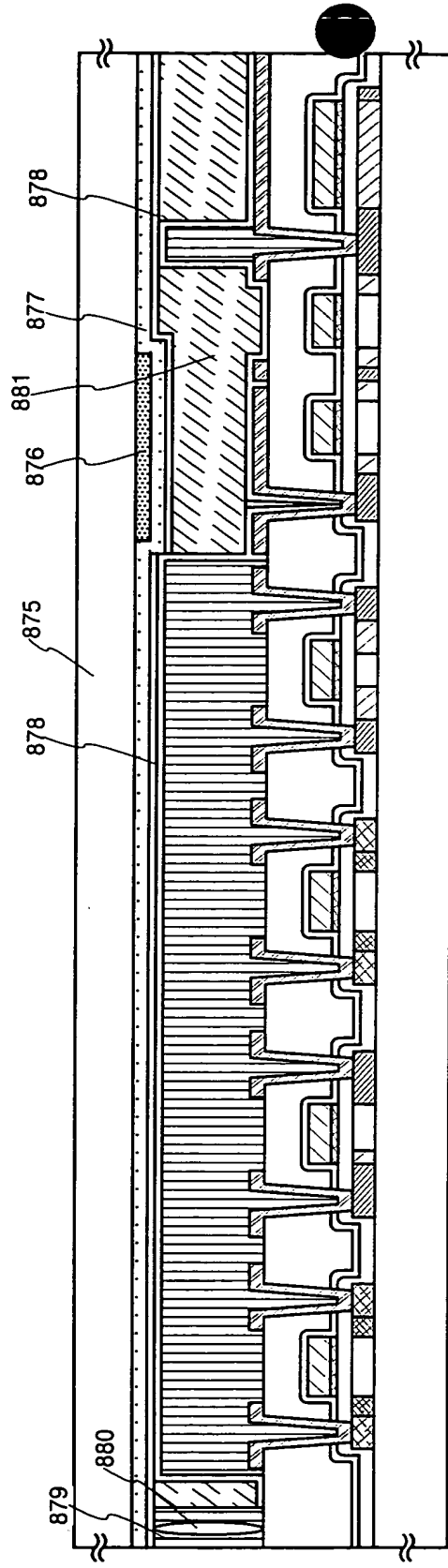


Fig.12B

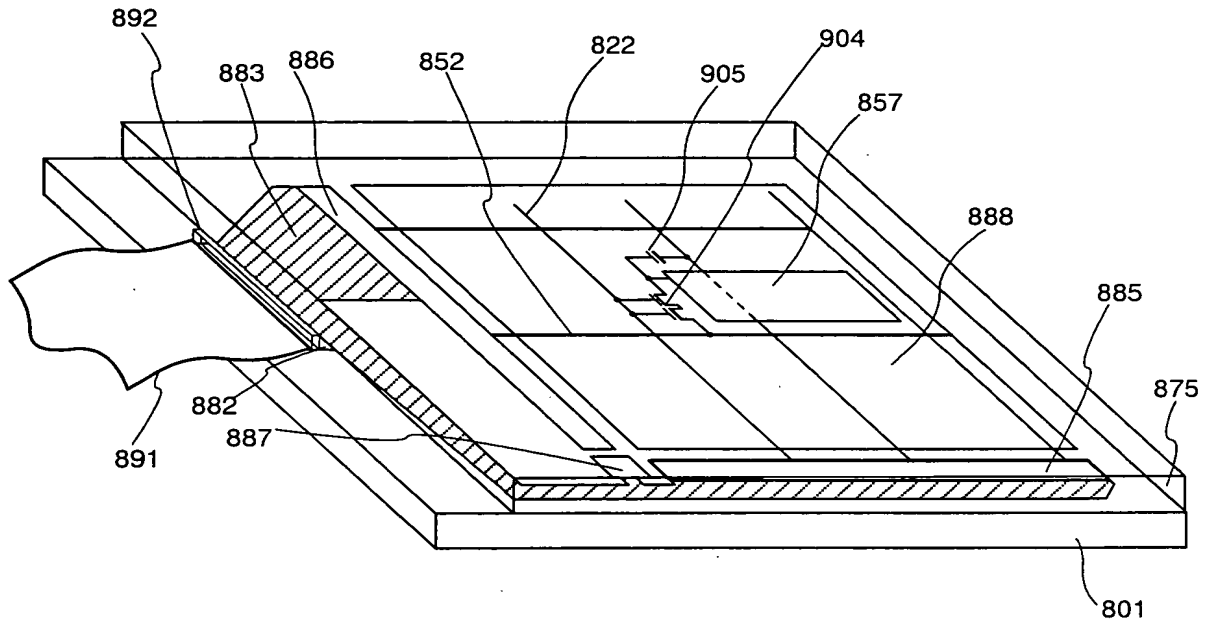


Fig.13



Fig.14

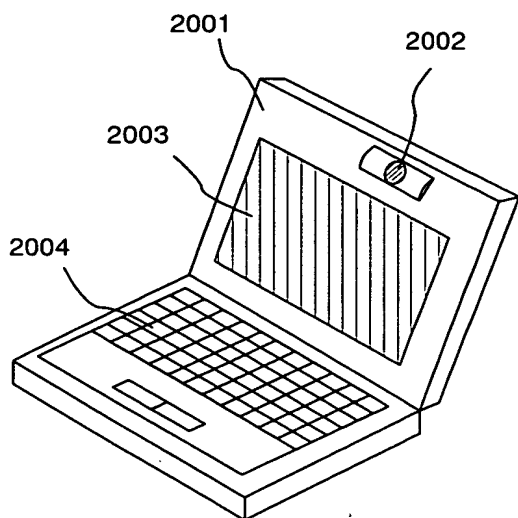


Fig. 15A

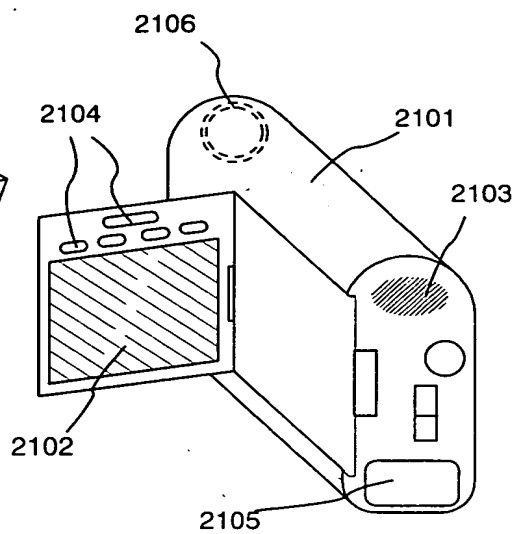


Fig. 15B

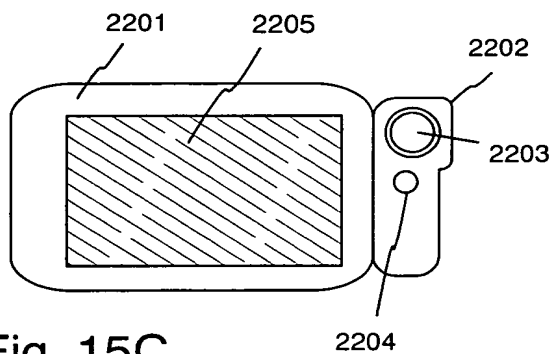


Fig. 15C

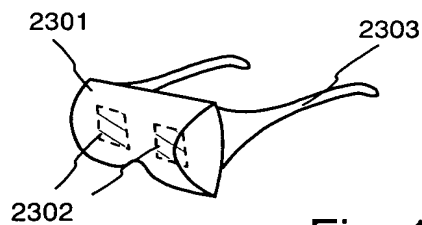


Fig. 15D

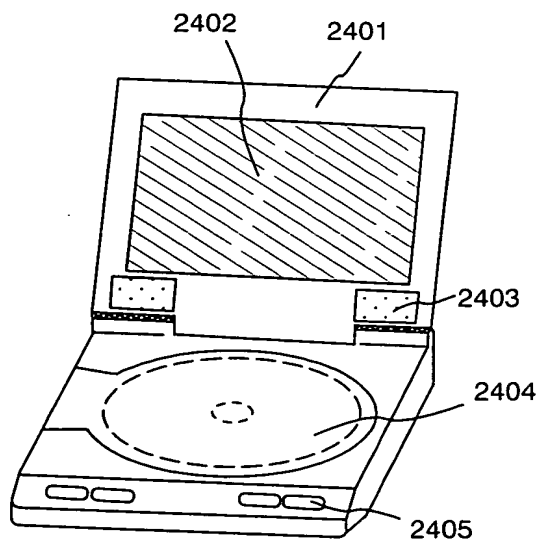


Fig. 15E

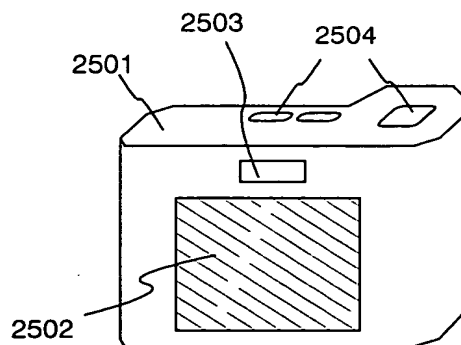


Fig. 15F

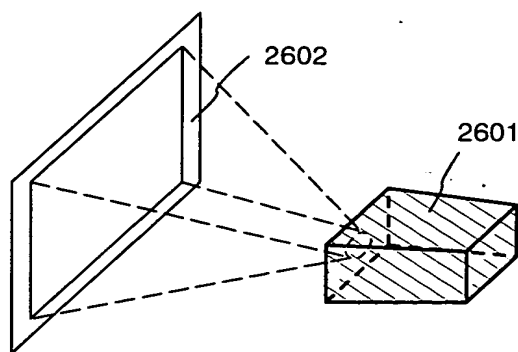


Fig. 16A

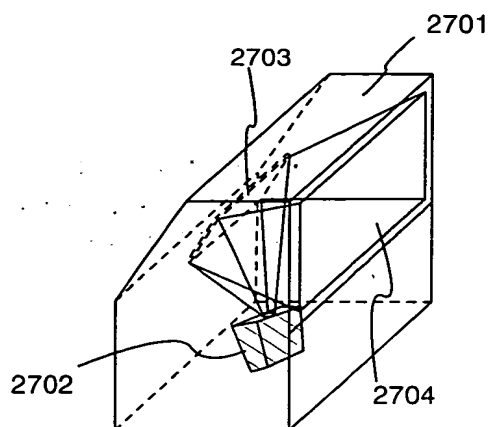


Fig. 16B

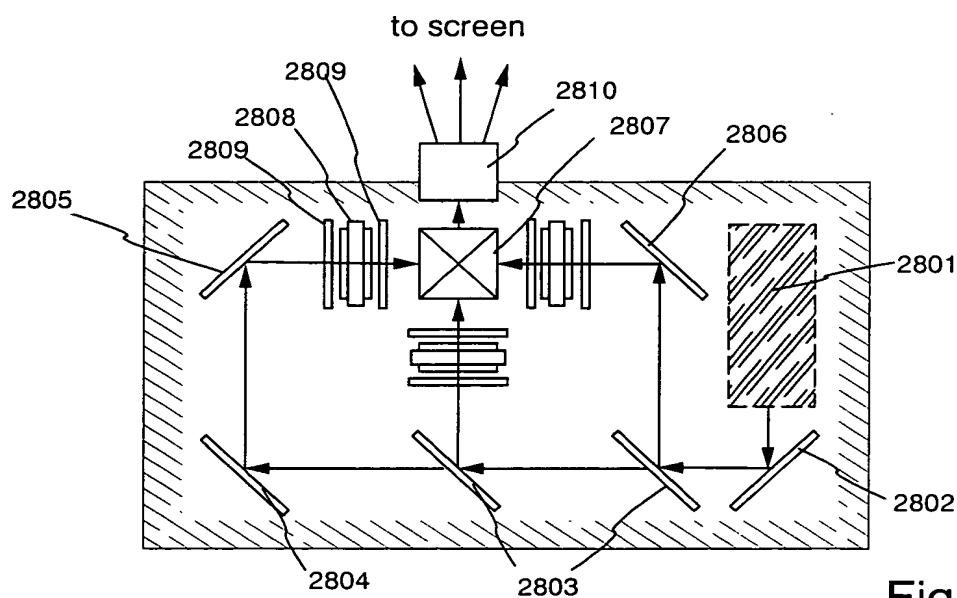


Fig. 16C

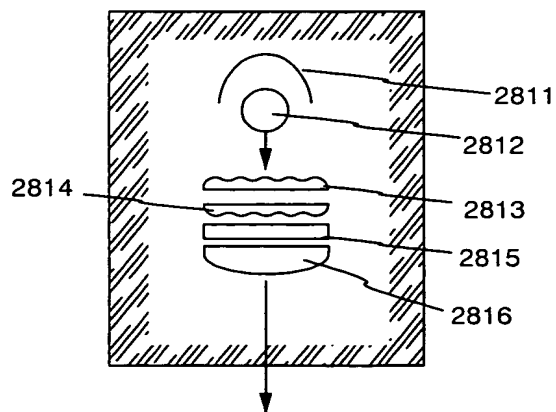


Fig. 16D

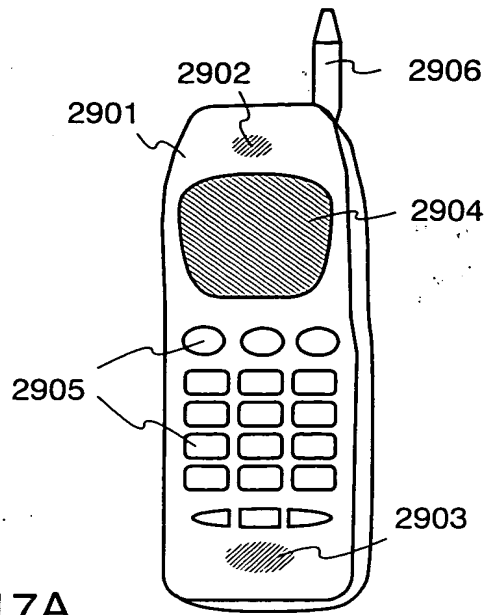


Fig. 17A

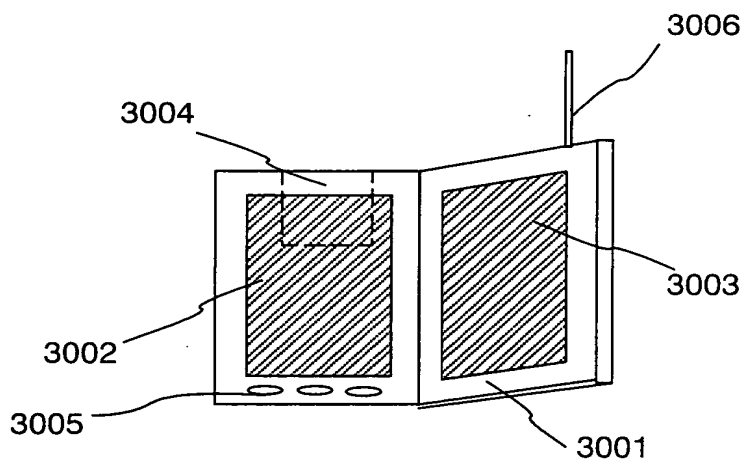


Fig. 17B

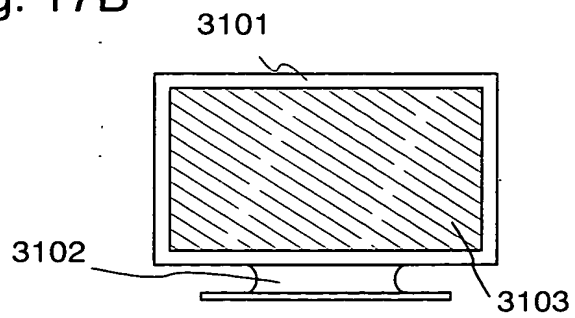


Fig. 17C

Fig.18A

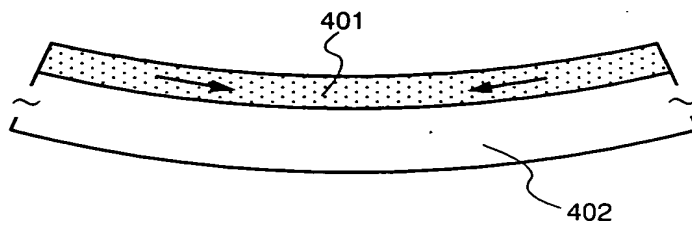
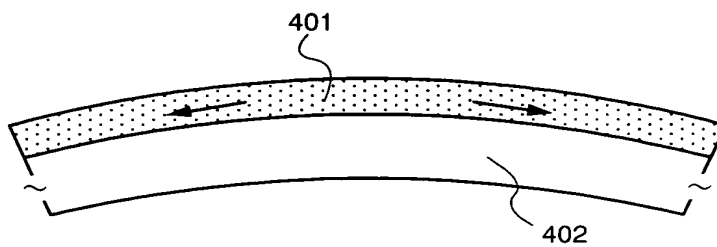


Fig.18B



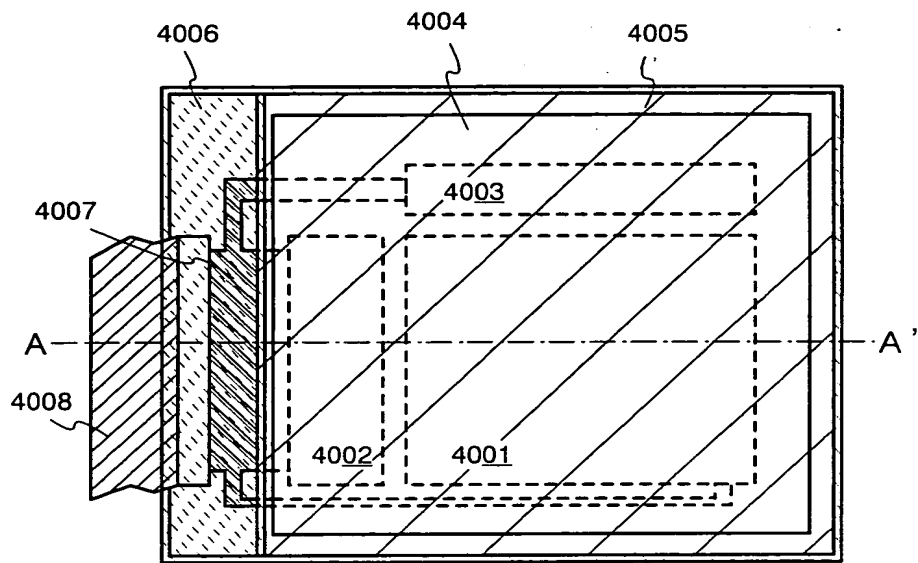


Fig.19A

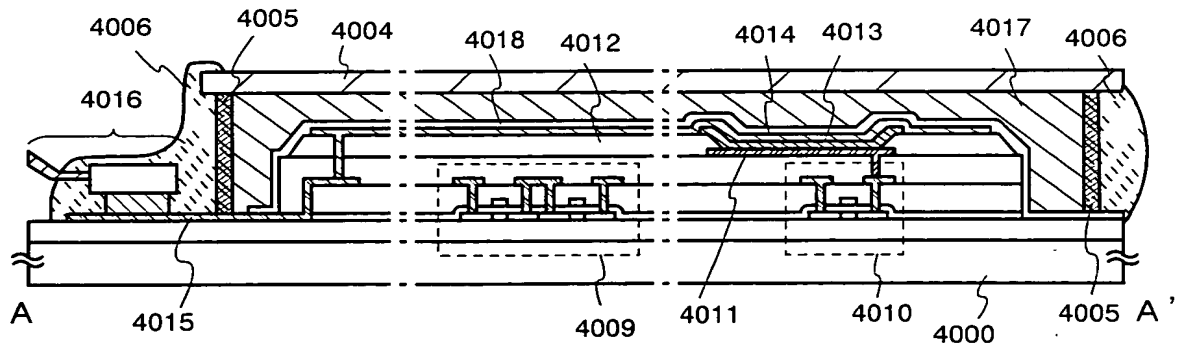


Fig.19B

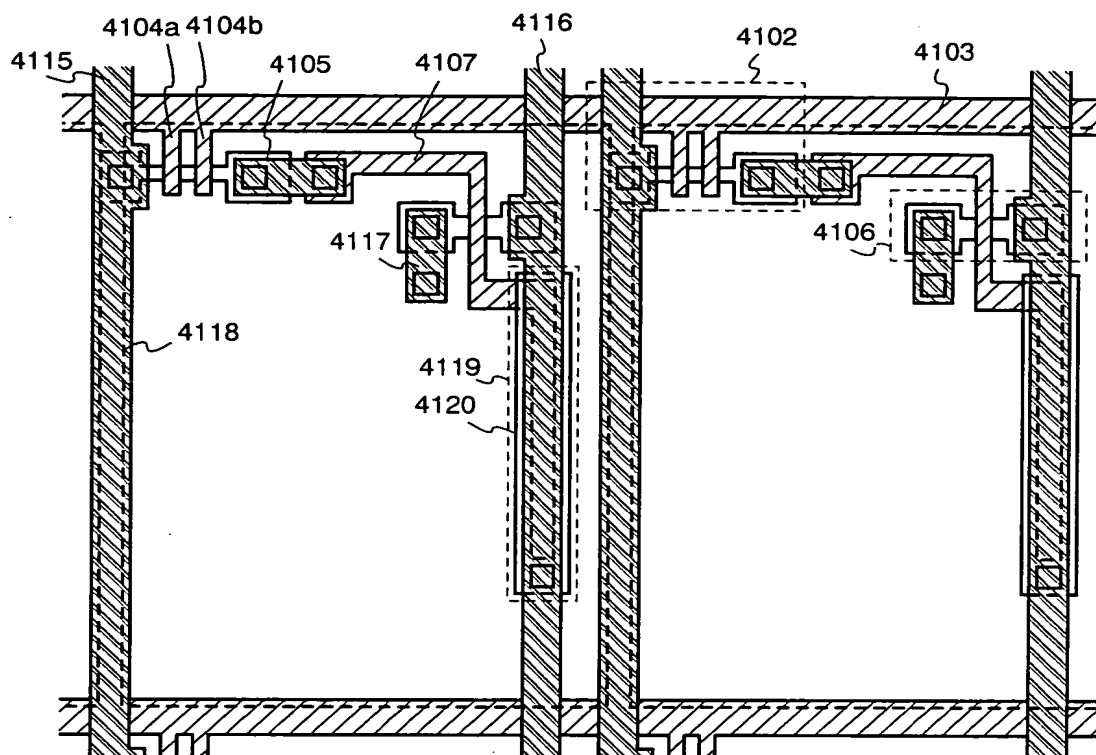


Fig.20A

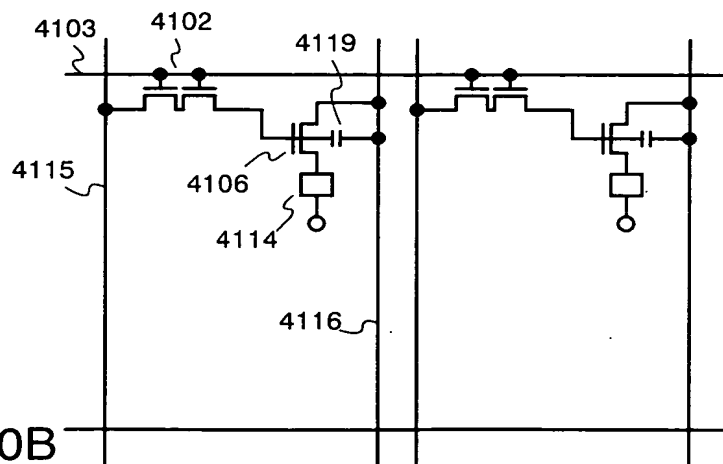


Fig.20B

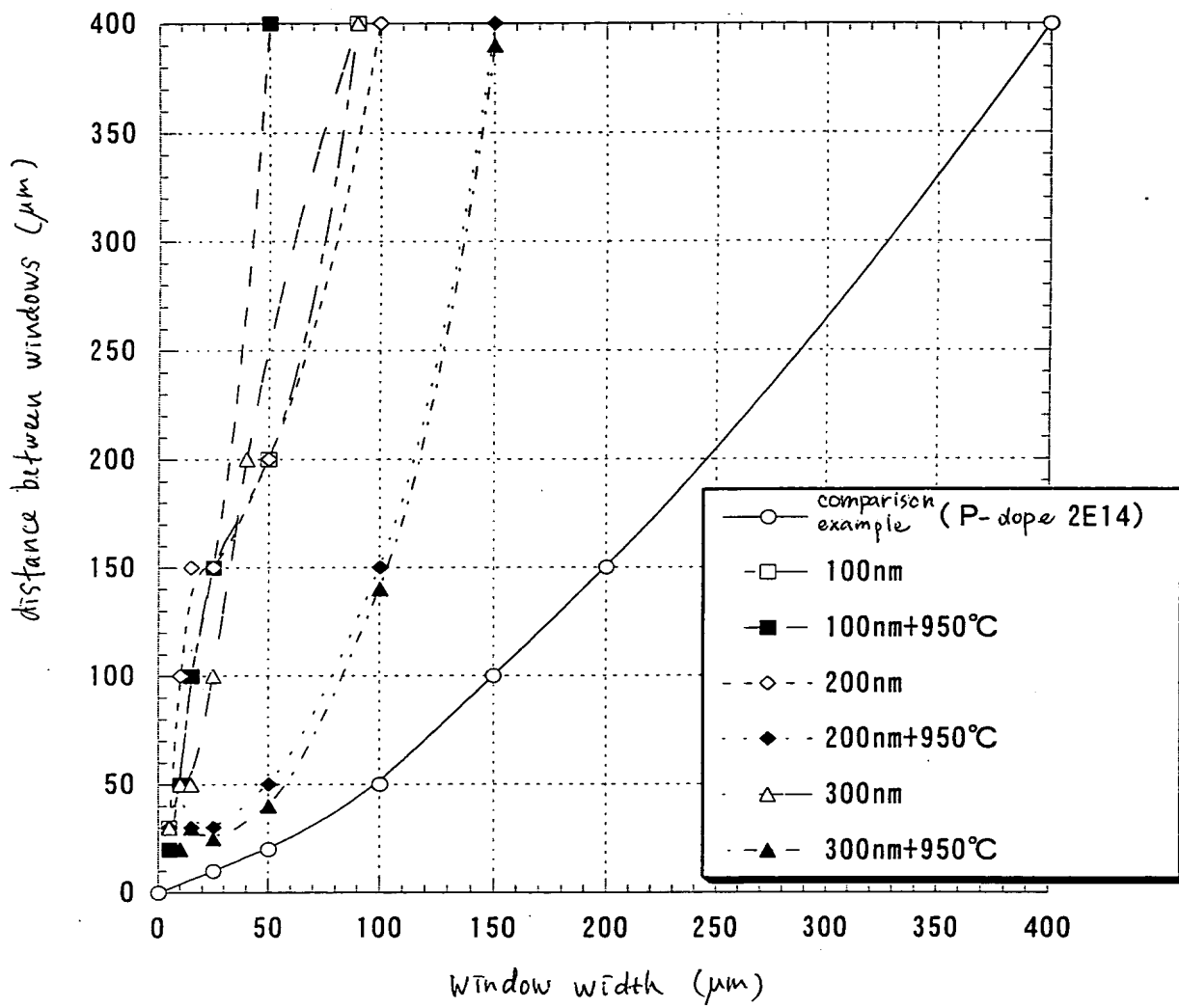


Fig. 21

Fig.22A

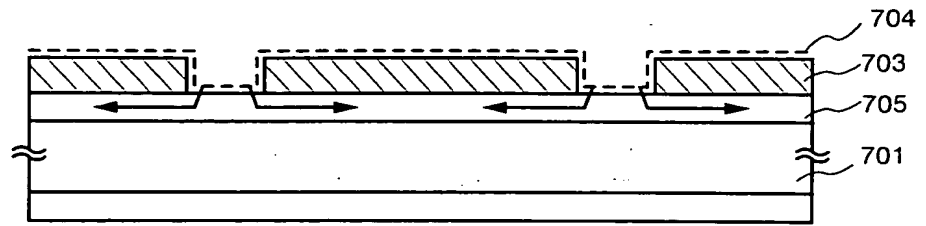


Fig.22B

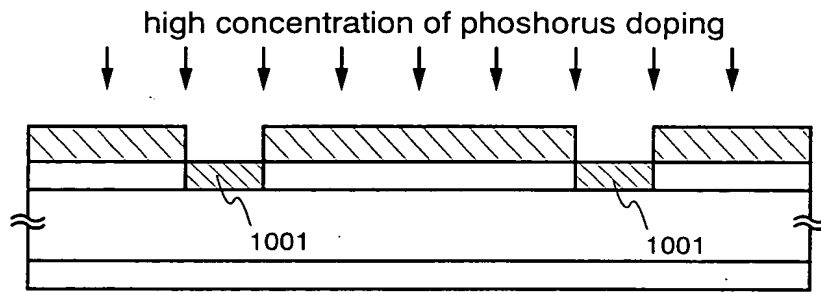


Fig.22C

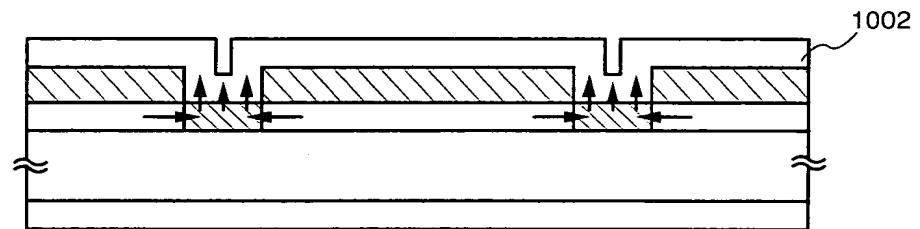


Fig.22D

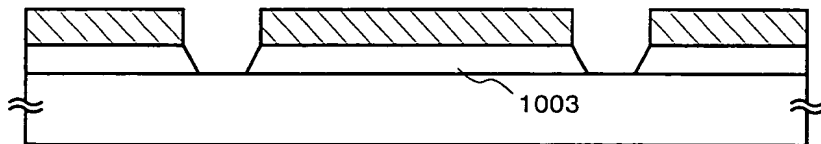


Fig.22E

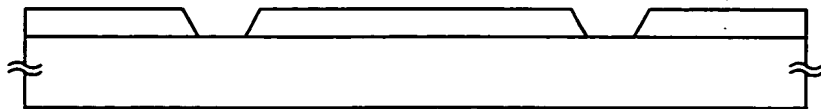


Fig. 23A

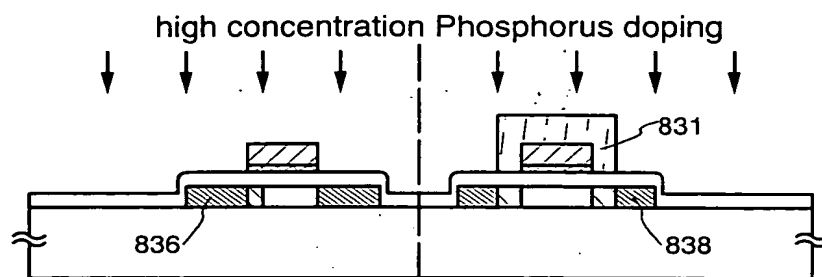


Fig. 23B

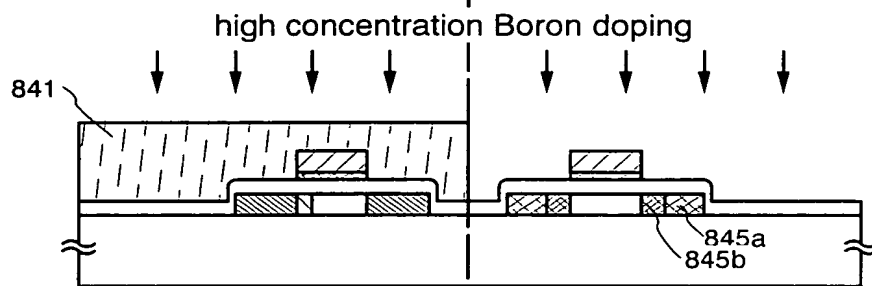


Fig. 23C

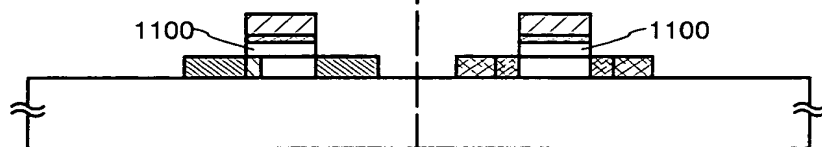


Fig. 23D

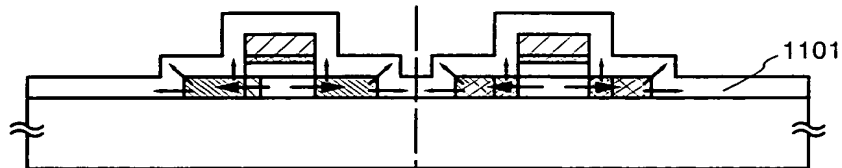


Fig. 23E

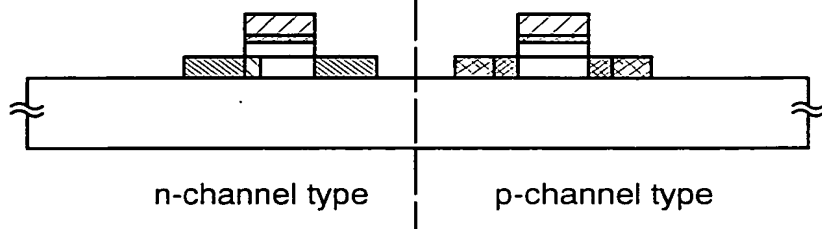


Fig. 24A

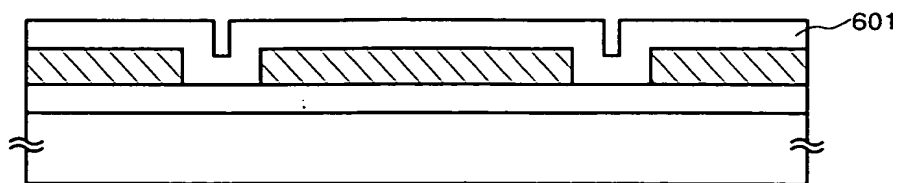


Fig. 24B

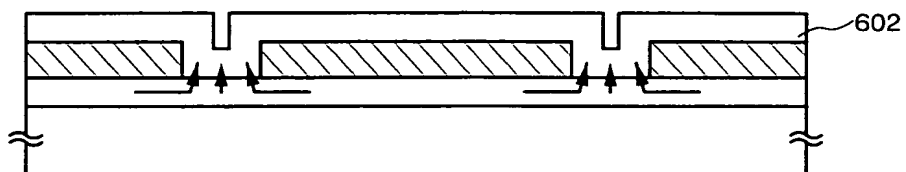


Fig. 24C

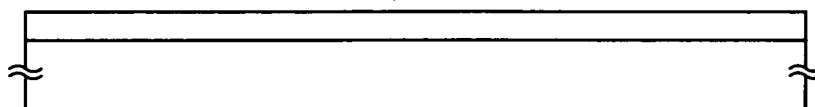


Fig. 24D

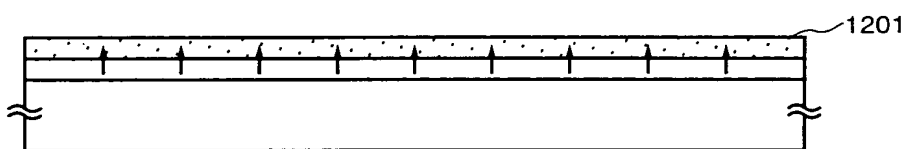


Fig. 24E

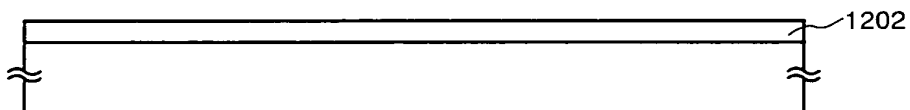


Fig. 25A

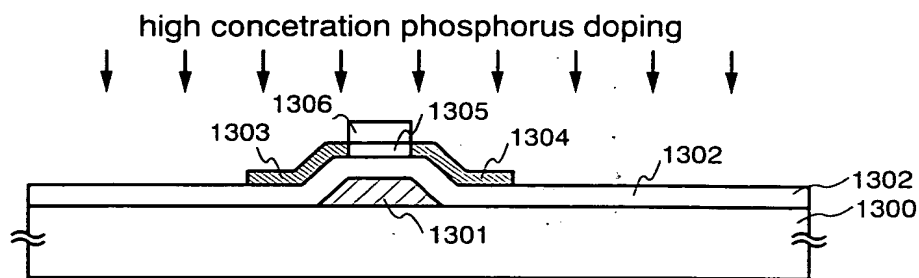


Fig. 25B

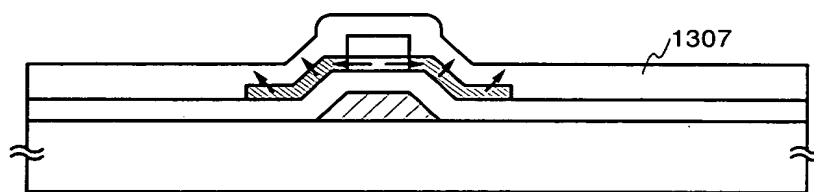


Fig. 25C

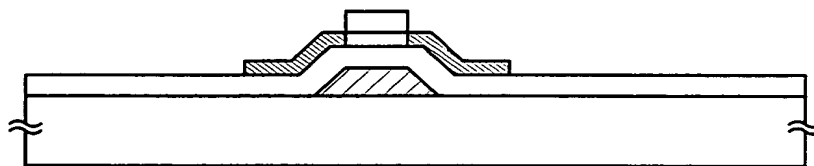
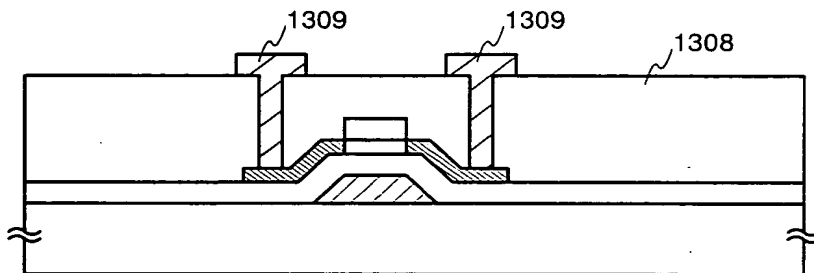


Fig. 25D



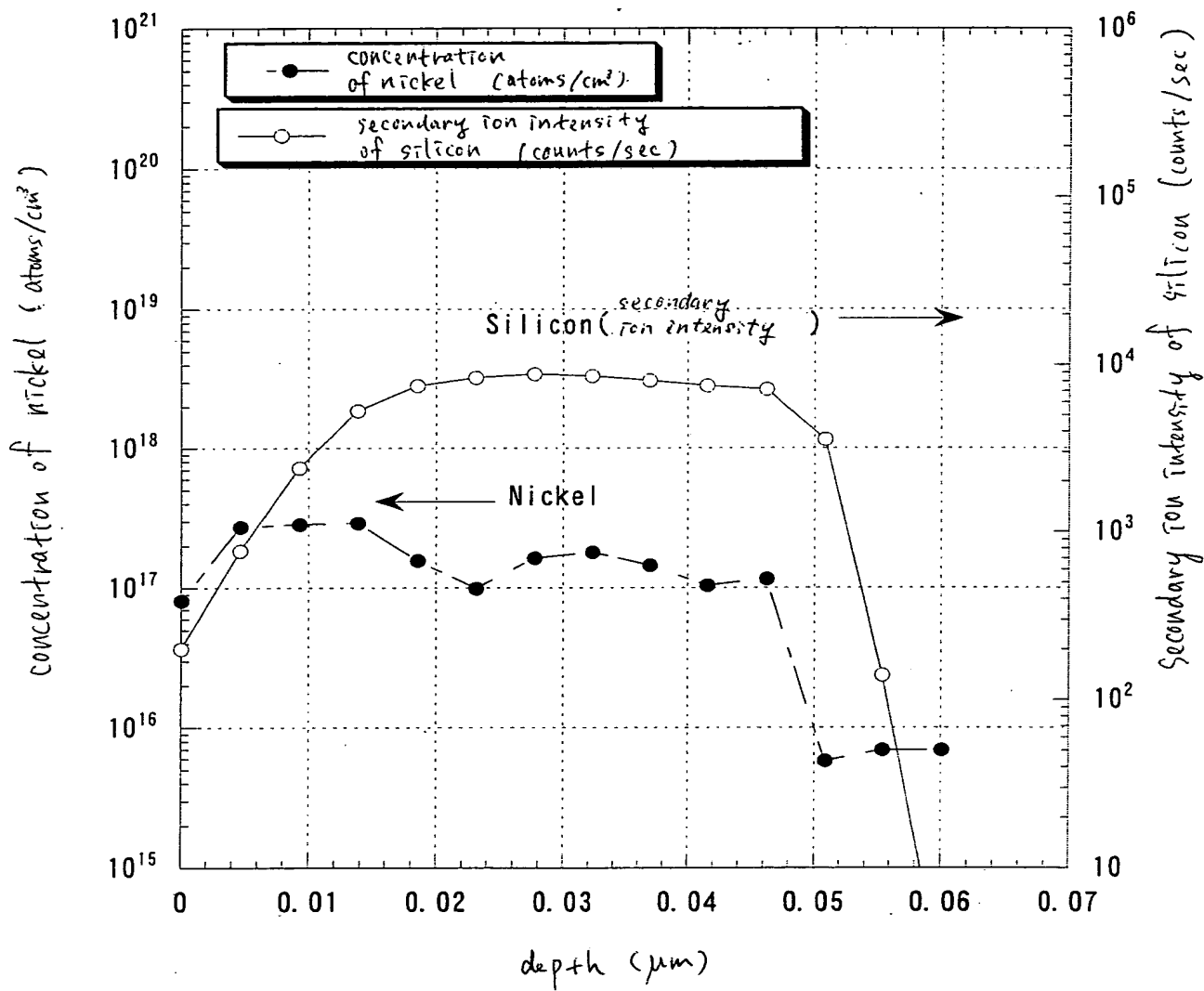


Fig. 26

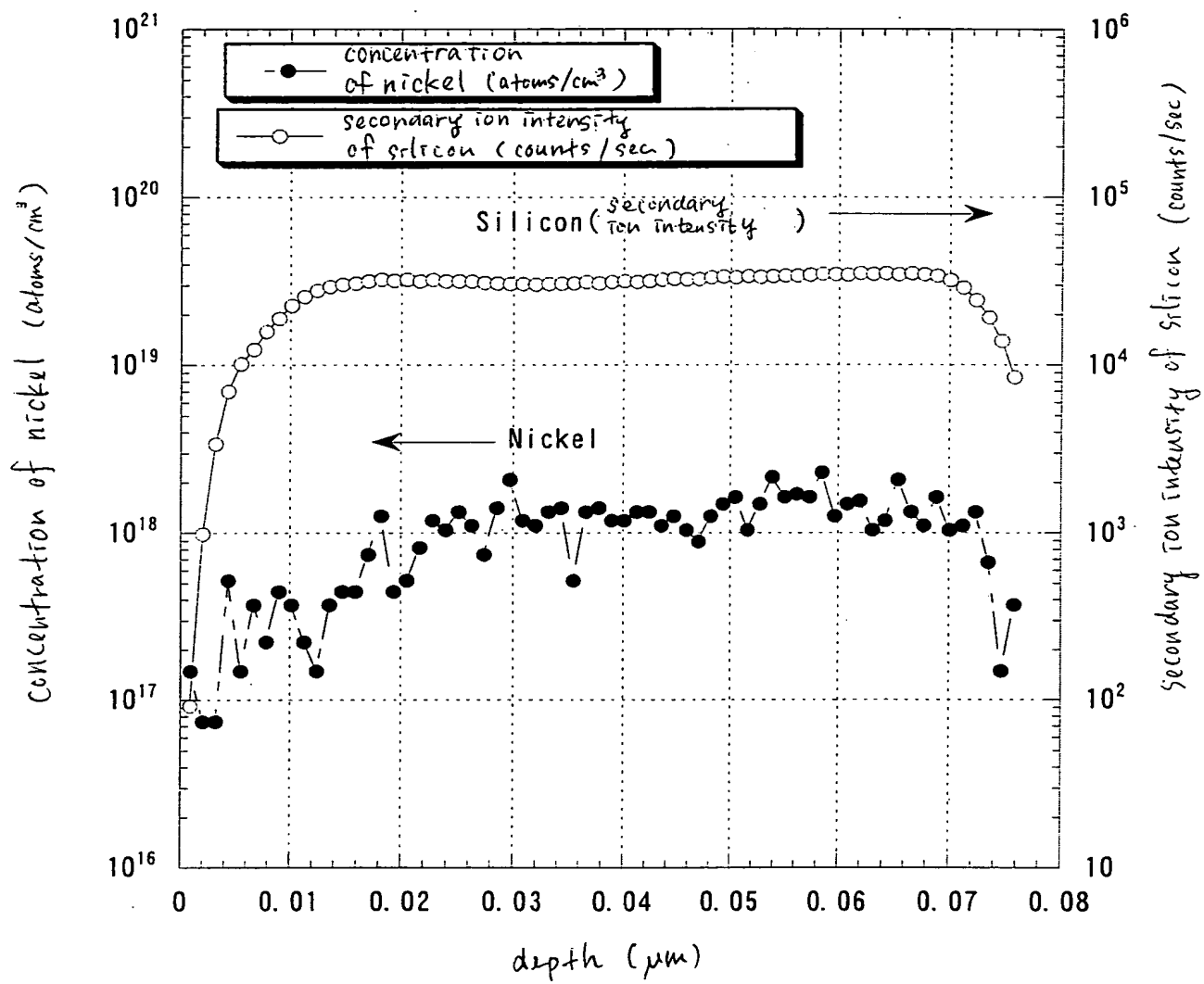


Fig. 27

Table 1

condition		film thickness (nm)	condition of thermal treatment	gettering effect
1	silicon nitride film formed by plasma CVD	150	None	x
2	silicon nitride film formed by plasma CVD	150	600°C, N ₂ , 12hr	○
3	silicon nitride film formed by plasma CVD	150	950°C, N ₂ , 2hr	○
4	silicon nitride film formed by plasma CVD	330	None	x
5	silicon nitride film formed by plasma CVD	330	600°C, N ₂ , 12hr	○
6	silicon nitride film formed by plasma CVD	330	950°C, N ₂ , 2hr	○
7	silicon nitride film formed by plasma CVD	470	None	x
8	silicon nitride film formed by plasma CVD	470	600°C, N ₂ , 12hr	○
9	silicon nitride film formed by plasma CVD	470	950°C, N ₂ , 2hr	○
10	silicon nitride film formed by LPCVD	300	None	○
11	silicon nitride film formed by LPCVD	300	950°C, N ₂ , 2hr	○